(2)

Is Organization the Synchronization Problem? Battle Staff Organization of the Heavy Task Force

A Monograph
by

Major Michael R. Thompson
Infantry

School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

First Term AY 89-90

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION School of Advanced Military Studies, USAC&GSC 6b. OFFICE SYMBOL (If applicable) ATZL-SWV	7a. NAME OF MONITORING ORGANIZATION
6c. ADDRESS (City, State, and ZIP Code) Fort Leavenworth, Kansas 66027-6900	7b. ADDRESS (City, State, and ZIP Code)
8a. NAME OF FUNDING/SPONSORING ORGANIZATION 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)
Is Organization the Problem?
Battle Staff Organization of the Heavy Task Force (U)

12. PERSONAL AUTHOR(S)
MAJ(P) Michael R. Thompson, USA

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
Monograph	FROM _____ TO _____	89/12/28	47

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This monograph explores both U.S. Army and Israeli Defense Force battalion level, battle staff doctrine within the framework of the battlefield operating systems. The principle research question is "what is the optimum battle staff organization to synchronize combat operations within the heavy task force?" Lessons learned at the National Training Center indicate U.S. heavy battalions have difficulty synchronizing the battlefield operating systems. Command and control (C2) is a key component of the synchronization process. The exercise of ~~command~~ C2 in the battalion task force is focused in four major command posts (CPs) - the tactical CP, the main CP, the combat trains CP, and the field trains CP. Israel's battalion staff doctrine is significantly different from our own and recent combat experience tempers their outlook. They fight with different (Continued on other side of form)

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT	21. ABSTRACT SECURITY CLASSIFICATION
☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS	UNCLASSIFIED
22a. NAME OF RESPONSIBLE INDIVIDUAL MAJ(P) Michael R. Thompson	22b. TELEPHONE (Include Area Code) (913) 684-2138 22c. OFFICE SYMBOL ATZL-SWV

DD Form 1473, JUN 86 *Previous editions are obsolete.*

SECURITY CLASSIFICATION OF THIS PAGE
UNCLASSIFIED

Item 19 cont.

C^2 nodes and they train and use their officers differently. What are the significant differences? Are there applicable insights that could improve U.S. command and control organizational doctrine?

The monograph first examines current U.S. Army battle staff doctrine and evaluates it against NTC experiences. Next, it examines IDF doctrine and evaluates it against published accounts from the Yom Kippur War. Finally, it compares the doctrine and modern experiences of the two nations according to the following criteria: effectiveness, resilience, and redundancy.

The study concludes that the U.S. battalion has too many command and control nodes. The combat trains command post should merge with the main command post. Finally, research implies that perhaps we are trying to synchronize too much at the battalion level.

SCHOOL OF ADVANCED MILITARY STUDIES

MONOGRAPH APPROVAL

Major Michael R. Thompson

Title of Monograph: Is Organization the Synchronization Problem? Battle Staff Organization of the Heavy Task Force

Approved by:

Dennis K. Hill
Lieutenant Colonel Dennis K. Hill, MS, ME — Monograph Director

William H. Janes
Colonel William H. Janes, MA, MMAS — Director, School of Advanced Military Studies

Philip J. Brookes
Philip J. Brookes, Ph.D. — Director, Graduate Degree Program

Accepted this 26th day of March 1990

ABSTRACT

IS ORGANIZATION THE SYNCHRONIZATION PROBLEM? - BATTLE STAFF ORGANIZATION OF THE HEAVY TASK FORCE BY MAJ(P) MICHAEL R. THOMPSON, USA, 47 PAGES.

This monograph explores both U.S. Army and Israeli Defense Force battalion level, battle staff doctrine within the framework of the battlefield operating systems. The principle research question is **"what is the optimum battle staff organization to synchronize combat operations within the heavy task force?"** Lessons learned at the National Training Center indicate U.S. heavy battalions have difficulty synchronizing the battlefield operating systems. Command and control (C^2) is a key component of the synchronization process. The exercise of command and control in the battalion task force is focused in four major command posts (CPs) - the tactical CP, the main CP, the combat trains CP, and the field trains CP. Israel's battalion staff doctrine is significantly different from our own and recent combat experience tempers their outlook. They fight with different C^2 nodes and they train and use their officers differently. What are the significant differences? Are there applicable insights that could improve U.S. command and control organizational doctrine?

The monograph first examines current U.S. Army battle staff doctrine and evaluates it against NTC experiences. Next, it examines IDF doctrine and evaluates it against published accounts from the Yom Kippur War. Finally, it compares the doctrine and modern experiences of the two nations according to the following criteria: effectiveness, resilience, and redundancy.

The study concludes that the U.S. battalion has too many command and control nodes. The combat trains command post should merge with the main command post. Finally, research implies that perhaps we are trying to synchronize too much at the battalion level.

TABLE OF CONTENTS

I. INTRODUCTION

STATEMENT OF THE PROBLEM.

"Synchronization of all combat multipliers is essential to victory on the AirLand Battle."[1] Battalion task forces at the National Training Center (NTC) frequently demonstrate difficulty synchronizing the seven battlefield operating systems[2] and therefore fail to produce maximum relative combat power at the decisive point.[3] Command and control (C^2) is a key component of the synchronization process. The exercise of command and control in the battalion task force is focused in four major command posts (CPs) - the tactical CP, the main CP, the combat trains CP, and the field trains CP.[4] If most units at the NTC prove deficient in synchronizing the battlefield operating systems through these four command posts, then perhaps part of the solution lies in the organizational doctrine itself.

Carl von Clausewitz states that in the study of means, the art of war experience counts more than any abstract truths.[5] While he warns against drawing "absolute truths" from isolated historical examples, insights are possible. A comparison between the Israeli Defense Force (IDF) experience in the 1973 Yom Kippur War and our own NTC experiences is used for this purpose.

---

[1]BG John C. Heldstab, National Training Center Lessons Learned: Commander's Comments, The CS Team. Headquarters, National Training Center and Fort Irwin, California, 8 May 1987, Introduction.

[2]U.S. Army Field Manual 71-2, The Tank and Mechanized Infantry Battalion Task Force. (Washington, DC: US Government Printing Office, September 1988). The seven battlefield operation systems are: Command and Control; Maneuver; Fire Support(indirect and air); Intelligence; Air Defense; Mobility; Countermobility, and Survivability; and Combat Service Support. pp. 1-10 - 1-13

[3]William C. Agerman, "After Action Report, National Training Center (NTC) Rotation 88-4." MEMORANDUM THRU: Director, CALL, FOR: Commander, CATA. On file at Center for Lessons Learned, Fort Leavenworth, Kansas, dated 16 February 1988.

[4]FM 71-2, p. 2-7.

[5]Carl von Clausewitz, On War. Edited and translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1976, p. 164.

The Yom Kippur War provides a recent historical example of what we may expect in modern war. Israel's battalion staff doctrine is significantly different from our own and recent combat experience tempers their outlook. They fight with different C^2 nodes. They train and use their officers differently. What are the significant differences? Are there applicable insights that could improve U.S. command and control organizational doctrine?

This monograph explores both U.S. Army and Israeli Defense Force (IDF) battalion level, battle staff doctrine within the framework of the battlefield operating systems. The principle research question is "what is the optimum battle staff organization to synchronize combat operations within the heavy task force?"

Assumptions.

Analysis and conclusions are based on the following assumptions:

* The National Training Center (NTC) provides a valid test ground for the heavy battalion task force against a realistic, world class enemy.

* The 1973 Yom Kippur War is a valid demonstration of modern warfare with implications for U.S. forces opposed by Soviet trained and equipped forces.

* U.S. battalion level force structure will not significantly change in the near future.

* Commitment of a heavy battalion task force would be employed as part of a heavy brigade in a mature theater against a sophisticated enemy.

Methodology.

This monograph first examines current U.S. Army battle staff doctrine and evaluates it against NTC experiences. Interviews with a former Battalion Commander with NTC

experience provides additional first hand information. Next, it examines IDF doctrine and evaluates it against published accounts from the Yom Kippur War. Primary doctrinal sources include U.S. student notes from the Israeli Staff College and interviews with an IDF Colonel attending the Command and General Staff College. Finally, it compares the C^2 organizational doctrine and modern experiences of the two nations according to the following criteria: **effectiveness, resilience,** and **redundancy.**

These criteria are an expansion of the criteria established in FM 101-5, Staff Organization and Operations. The primary criterion in FM 101-5 is effectiveness and considerations for balancing effectiveness with survivability.[6] I expanded this criterion to include resilience and redundancy.

Effectiveness means the degree to which the doctrine contributes to the overall battlefield operating systems synchronization process. **Resilience** criterion tests how dependent the organization is on individual positions within the staff. How well can the organization absorb battlefield losses? The last criterion, **redundancy**, evaluates the organizations ability to sustain functions over extended periods of continuous operations. Can the organization still function when key positions are undermanned? How much leadership depth exists within each functional node to allow for the temporary absence of a key staff member?

Understanding the meaning of synchronization is key to the evaluation process. FM 100-5, Operations, defines it as follows:

> *Synchronization is the arrangement of battlefield activities in time, space and purpose to produce maximum relative combat power at the decisive point. Synchronization is both a process and a result. Commanders synchronize activities; they thereby*

---

[6]U.S. Army Field Manual 101-5, Staff Organization and Operations. (Washington, DC: US Government Printing Office, September 1984). pp. 8-1 - 8-3.

produce synchronized operations. ...[It] takes place first in the mind of the commander and then in the actual coordination of movements, fires and supporting activities. ...Most of all, it requires unambiguous unity of purpose throughout the force.[7]

FM 71-2, The Tank and Mechanized Infantry Battalion Task Force, defines synchronization as:

...the process of integrating the activities on the battlefield to produce the desired result. Synchronization of operations is required in order to maximize the combat power of the combined arms team. It requires a command, control, and communications system that can mass and focus the combat power of the task force at the decisive time and place.[8]

II. BACKGROUND

NTC VS MODERN COMBAT EXPERIENCE.

The great generals of the past were victorious on the battlefield, because they knew how to orchestrate their combat power to strike the enemy where he was vulnerable and did so in an integrated synchronized manner so the affects were overwhelming. As we can learn from the great generals of the past, we can also learn from the experiences of successful commanders who have recently "fought" at the NTC.[9]

The U.S. has not fought a "high-intensity" conflict since WW II. The Korean War was the last large scale commitment of our heavy forces. Our Vietnam experience has limited relevance to the demands of a high-intensity conflict of the nature anticipated in a European or other modern battlefield. We are therefore highly dependent upon the National Training Center (NTC) to evaluate our doctrine and our ability to execute it.

The mission of the NTC is to provide tough and realistic training to the Army and Air Force in mid to high intensity conflicts in accordance with AirLand Battle Doctrine. The foundations of all CTCs [Combat Training Centers] *are:*

---

[7]U.S. Army Field Manual 100-5, Operations. (Washington, DC: US Government Printing Office, May 1986). p. 17-18.

[8]FM 71-2. p. 1-6.

[9]Heldstab, Introduction.

** training objectives based on units' war time mission*
** the most realistic opposing force*
** performance evaluation and feedback through:*
*** instrumented observation and*
*** doctrinally proficient observer controllers who provide immediate after action reviews*
** tactical lessons learned to the Army worldwide*[10]

Yet, for all its training value, the NTC is not *real*. People are not killed. Vehicles do not explode and burn. Tactical pauses are dictated by change of mission schedules, not by the culminating points of the opposing forces. We must therefore be constantly critical in our analysis of NTC lessons learned to ensure lessons learned at Fort Irwin apply to the reality of combat. This monograph uses Israel's experience in the Yom Kippur as a sounding board for such analysis.

Applicability of the '73 Yom Kippur War.

> *Here at last was a conflict that, though still falling short of the ultimate in modern arms, at least came very close to it.*[11]

The Yom Kippur War provides a glimpse of what we may expect in modern, high intensity conflict. While there are certainly significant strategic and operational differences between Israel's dilemma in the Middle East in October 1973 and the U.S. today, many similarities exist at the tactical level and are relevant. Both sides had mass quantities of modern, lethal weapons. The Soviet Union largely equipped and trained the enemy. Surprise, rapid mobilization, and defense against a numerically superior force characterized Israel's introduction into the war. All these factors are relevant to plausible scenarios the U.S. could face today.[12]

---

[10] Center For Army Lessons Learned Compendium, Vol I: Heavy Forces, Fall 88, Preface. U.S. Army Combined Arms Training Activity (CATA), Ft Leavenworth, KS 66027-7000.

[11] Martin van Creveld, Command in War. (Cambridge, Mass: Harvard University Press, 1985). p vii - ix.

[12] Ibid.

III. CURRENT U.S. TASK FORCE STAFF DOCTRINE.

ORGANIZATION AND FUNCTIONS.

A brief summary of U.S. organizational doctrine as defined in FM 71-2 is outlined below as a basis of comparison with IDF doctrine. A U.S. heavy task force focuses command and control (C^2) on the four major command posts (CPs) shown in figure 1.[13]

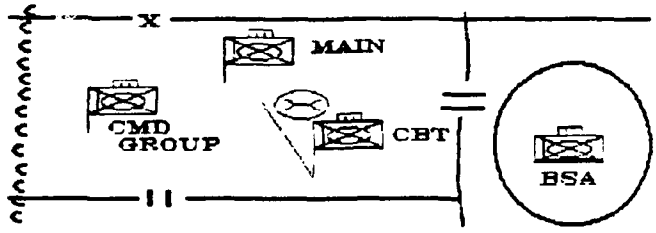

FIGURE 1: COMMAND AND CONTROL ORGANIZATION[14]

TACTICAL COMMAND POST

FM 71-2 states that the purpose of the tactical command post is to maintain communications during a fast moving situation and facilitate movement of the main CP. Although a battalion does not normally use a formal tactical command post, the task force commander does normally command from a forward command group where he can see and personally influence the fight.[15]

> *The command group consists of the commander and those he selects to go forward to assist him in controlling maneuver and fires during the battle. It normally includes the FSO, FAC and S3.*[16]

The fire support officer (FSO) coordinates all the task force fire support and is a habitually associated officer from the field artillery battalion in direct support of the brigade.[17] The forward air controller (FAC) is a U.S. Air Force officer. He is responsible for coordinating air force

---

[13] U.S. Army Field Manual 71-2, p. 2-7.
[14] Ibid., p. 2-3.
[15] Ibid., p. 2-8 - 2-9.
[16] Ibid., p. 2-9.
[17] Ibid., p. 2-7.

assets in support of the task force.[18] Doctrinally, both normally operate forward with the commander.[19]

The operations and training officer (S-3) is responsible for planning, organizing the force and coordinating combat operations to include synchronizing all combat and combat support assets of the task force. Normally he operates forward with the task force commander as part of the command group.[20] Although FM 71-2 simply states he will most often operate forward with the commander, NTC lessons learned recommend they normally split locations to expand span of control. The battalion commander and the command group (-) position with the main effort. The S-3 positions with the secondary effort.[21]

Main Command Post

The task force main CP is the control, coordination and communications center for combat operations.[22]

Key players within the main command post include the executive officer (XO), the S-2 section and S-3 section, the fire support element (FSE), representatives from other attached elements, and the forward command post when not forward. The primary functions of the main command post are monitoring and assisting in command and control; requesting and synchronizing additional CS and CSS; and reporting immediate impact issues to the task force commander.[23]

During the fight, the executive officer is a key synchronization agent working from the main command post. Doctrinally, he has three major duties. He is the second in

---

[18] Ibid.
[19] Ibid., p. 2-7.
[20] Ibid., p. 2-4.
[21] National Training Center Lessons Learned: Commanders Memorandum. Headquarters, National Training Center and Fort Irwin, California, 13 December 1985, p. 20.
[22] FM 71-2, p. 2-8.
[23] Ibid., p. 2-8.

command of the task force, he is the chief of staff, and he is the principle integrator of CSS in support of maneuver.[24]

As the second in command, he must be prepared to move forward and assume command of the task force at any time. As the chief of staff, he normally supervises the overall synchronization effort from the main command post. While he is free to move about the battlefield as required, doctrinally he performs his chief of staff function from the main command post during the fight. The S-2 section and S-3 section, and fire support element, operate under his direct supervision. Attached elements such as engineers and air defense artillery work through the S-3 and are also part of the XO's overall synchronization effort during the battle.[25]

As the primary integrator of CSS, the XO communicates requirements through the combat trains command post. During the fight, NTC lessons learned demonstrate XOs are usually most effective exercising this function from the main command post. During planning and recovery phases, he must balance duties between coordinating staff activities within the main CP and ongoing CSS requirements.[26]

The task force CSS assets are normally echeloned into company combat trains, task force combat trains, and the task force field trains. Combat trains are organized to provide immediate combat support forward. The field trains are normally located in the brigade support area (BSA) in coordination with the forward support battalion commander who organizes security and positioning.[27]

COMBAT TRAINS CP

The combat trains CP is the focal point of combat service support for the unit. The combat trains CP, under the supervision of the S4, anticipates,

---

[24]Ibid., p. 2-3.
[25]Ibid.
[26]Center for Army Lessons Learned Newsletter, 27 February 1987, p. 19
[27]FM 71-2, p. 7-13.

requests, coordinates, and supervises execution of combat service support.[28]

The combat trains include the combat trains CP, task force aid station, decontamination assets, all uploaded ammunition and fuel vehicles, elements of the communications platoon, and the unit maintenance collection point (UMCP). The combat trains CP is also the alternate main CP.[29]

Key players within the combat trains include the S-1, S-4 and BMO. The adjutant (S-1) exercises his personnel service support function from the combat trains. He is normally the assistant officer-in-charge of the combat trains CP. The logistics officer (S-4) is the primary integrator of all aspects of CSS at the combat trains. He works under the supervision of the task force XO and coordinates with the S-1, BMO, and HHC commander. The S-4 is the officer-in-charge of the combat trains. The UMCP is collocated with or located near the combat trains. From this location, the battalion maintenance officer (BMO) supervises the maintenance and recovery efforts of the maintenance platoon.[30]

Field Trains CP

The field trains CP is responsible for coordinating the collection and movement of CSS from the task force field trains and the forward support battalion, to forward elements of the task force. Functions include supervising operations of the support platoon, maintenance platoon, company and attached units' supply sections, the S-1 section, and the task force dining facility. The field trains CP organizes and dispatches logistics packages (LOGPACs) on a regular basis to send supplies, equipment, and people forward. Requirements are coordinated between the combat and field trains CPs.[31]

Key to making all this happen is the headquarters and headquarters company commander. His company XO, the first sergeant, and the support platoon leader assist him. The HHC

[28] Ibid., p. 7-3.
[29] Ibid., p. 7-13
[30] Ibid.

commander is the primary interface between the forward support battalion commander, the brigade administration and logistics staff, and the combat trains CP.[32]

ANALYSIS:

NTC LESSONS LEARNED.

Units at the NTC practice our current C^2 doctrine but experience difficulty achieving the level of synergism desired. This section highlights strengths and weaknesses based on published NTC lessons learned.

FORWARD COMMAND POST

NTC lessons learned support FM 71-2 doctrine for the command group to operate from a forward vantage point. The best place for the commander to be is where he can:

> *... best see the battlefield and where he can best bring the weight of his personality to bear on the outcome of the fight.*[33]

While commanding from a forward position is both the doctrinally accepted and the practiced norm, it does create additional command and control problems. Most significant is the high task force commander loss rate. Commanders were "killed" at rates ranging from 46% - 70% during 64 rotations in 1987. Fortyseven percent of these occurred within the first hour of the direct fire engagement. Direct involvement in the firefight tripled his likelihood of being killed. These rates are consistent with historical experiences from WW II through the 1973 Yom Kippur War.[34]

Once the commander is out of action, there is often a time delay before anyone is aware of it. Once discovered, lack of standard succession of command procedures further degrade command and control. With the S-3 separate with the

---

[31] Ibid., p. 2-10.

[32] Ibid.

[33] LTC Allen G. Vitters, "Issues Identified by the Combined Arms Assessment Team, NTC Special Rotation 86-7." Fort Knox, KY: 17 June 1986.

[34] Center For Army Lessons Learned Newsletter, 31 January 1988. U.S. Army Combined Arms Training Activity (CATA), Ft Leavenworth, KS 66027-7000. pp. 2-5.

secondary effort and the XO in the TOC, no one is in position to command the task force effectively. All this typically happens during the first thirty minutes of the direct fire engagement as the enemy continues to press forward.[35]

Another recurring problem at the NTC is coordination with the fire support officer and the forward air controller. Without a comparable fighting vehicle, they frequently become separated from the task force commander in the heat of battle and in rough terrain.[36] Riding with the commander (difficult in a tank), the FSO and FAC can mass fires and integrate airspace coordination areas. However, collocating the FSO and FAC in the commanders vehicle exceeds the vehicles radio capacity. The commander needs at least two FM radio nets plus his mobile subscriber equipment (MSE). The FSO needs access to TACFIRE nets and a non-TACFIRE net is recommended.[37] The FAC needs unique HF and VHF radios to talk to aircraft and air force coordination channels. Even if the space limitations could be overcome, all these people and equipment in a single vehicle would be too vulnerable to a single, catastrophic loss.

Tying the FAC to the commander's vehicle also creates an additional dilemma. The FAC cannot always direct air from the command group location. The 1985 NTC commander BG Leland sees this problem significant enough to recommend allocating two FACs to the task force.[38] This solution would require yet another fighting vehicle.

The task force S-3 duties prove difficult as well. Doctrinally, he is the primary staff officer responsible for synchronizing all battlefield operating systems except combat service support.[39] He can do this with relative success during

---

[35]Center For Army Lessons Learned Compendium, Vol I: Heavy Forces, Fall 88, Preface. U.S. Army Combined Arms Training Activity (CATA), Ft Leavenworth, KS 66027-7000. p. 36.

[36]Center For Army Lessons Learned Newsletter, 31 January 1988. p. 11.

[37]Ibid., p. 6.

[38]BG E.S. Leland, Jr., National Training Center Lessons Learned: Commanders Memorandum, p. 37.

[39]FM 71-2, p. 2-4.

the planning stage, but during execution a large proportion of this effort is shared with the XO. The XO is most often in the TOC; the S-3 is forward on a separate axis or avenue of approach.[40] Thus separated, units at the NTC often experience coordination problems between the XO, S-3, and S-2.[41] These coordination problems have similar impact on combat support assets. Several factors contribute to the problem. The S-3, many times a captain, often lacks experience and training.[42] Duties between the XO and S-3 often conflict and are not adequately defined.[43] Duties and staff relationships differ between garrison and field operations.[44] These factors complicate the S-3's job and can detract from the overall synchronization effort.

Main Command Post

> *... the TOC is usually ineffective - left behind in the attack and overrun in the defense or the delay.*[45] *Fundamentally, the TOC is a message center. It should serve as a focal point for the staff, a place through which information flows, and from which orders and information are disseminated.*[46]

Synchronizing the battlefield operating systems within the TOC is often piecemeal and incomplete.[47] Intelligence preparation of the battlefield (IPB) is too often left solely to the S-2 instead of involving the entire staff. Timeliness in IPB planning, use of all available collection assets, and updating and disseminating information in a timely fashion is often lacking.[48] Synchronizing fires, both ground and air, is

---

[40]Center For Army Lessons Learned Newsletter, 31 January 1988. p. 11.

[41]U.S. Army Center for Lessons Learned. Observation 3522, 11 July, 1988.

[42]MAJ Michael L. Parker, "Battalion Task Force Command and Control -- Are We Using the "Big Four" Most Effectively?" Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, AY 1988-89, p. 31.

[43]MAJ Albert P Lawson, "The Battalion XO's Role During Continuous Combat Operations: Cybernetic Fix or Command Back-up?" Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, AY 88-89, p. 21.

[44]Harvey A. Teston, "Command and Confusion at the NTC." Military Review, November, 1985, p. 64.

[45]MAJ Vernon W. Humphery, "NTC: Command and Control", Infantry, (September - October 1984), p. 37.

[46]Ibid., p. 38.

[47]U.S. Army Center for Lessons Learned. Observation 1759, 07 April 1986.

[48]Center For Army Lessons Learned Compendium, Vol I: Heavy Forces, Fall 88, pp. 3-5.

complicated by the FSO and the FAC forward with the commander and the fire support element in the TOC.[49] Getting air defense early warning to the maneuver units is ineffective.[50] Failure to adequately coordinate and control engineer assets, especially bulldozers, causes inefficient use of limited assets.[51] Combat service supporters are often not kept informed on the tactical situation and therefore cannot anticipate logistics requirements.[52] Putting all this together demands the authority and experience of the XO in the TOC.

The XO is the only officer in the staff with the background and experience necessary to support and orchestrate TOC operations.[53] Without him present, TOC supervision is left to the assistant S-3. Units that try to run the TOC with the assistant S-3 on a regular basis usually experience an ineffective TOC. Typically, the assistant S-3 lacks the requisite experience. Rank differences can cause problems when dealing with other staff officers and company commanders. Backup for continuous operations is limited.[54]

NTC lessons learned document agreement between doctrine and field requirements. If the TOC is to be the "brain" of the task force, it requires considerable assets and leadership. The TOC should track the battle, analyze data, plan for future operations and disseminate information. These functions require the XO's presence during the battle. After the battle, the S-3 Air can manage the TOC, freeing the XO to attend to logistics.[55]

With the XO's focus on the tactical fight, devoting energies to the CSS effort is difficult.[56] Dedicating a radio to the admin/log net within the TOC to coordinate CSS exceeds

---

[49]Center for Army Lessons Learned Newsletter, 27 February 1987. p. 6.
[50]Center For Army Lessons Learned Compendium, Vol I: Heavy Forces, Fall 88, p. 21.
[51]Ibid., p. 23.
[52]Center for Army Lessons Learned Newsletter, 31 January 1986, p. 15.
[53]Ronald M. Bonesteel, "The Battalion XO in Combat: Where Will He Be Most Effective?", Armor, (Jan-Feb 89), p. 32.
[54]Ibid.
[55]Center for Army Lessons Learned Newsletter, 27 February 1987. p. 18 - 19.

available resources. Even though mobile subscriber equipment (MSE) can potentially help this problem, the task force is largely dependent upon the combat trains command post and the ability of the S-4 to manage the CSS function.

Combat Trains

The combat trains are capable of performing the CSS function, but often lose track of the tactical situation.[57] This is a function of simple, physical realities. The brigade and task force admin/log radio nets are at least as busy as the command nets. These nets receive the most attention in the combat trains command post. The frequent required absence of the S-4 exacerbates the problem further. Managing LOGPACS is his primary task. A large amount of his coordination effort with the forward companies and the field trains is done at the logistics release point (LRP). He cannot be at the CP all of the time. The S-1 helps in this effort, but he is often on a rotating shift with the S-4.

Units have tried several modifications to try and help this situation. One had success in putting the S-4 in the TOC.[58] Another located the combat trains close to the TOC.[59] These modified techniques helped coordination problems considerably. However, consolidation around the main command post brings with it increased physical and electronic signature, adding to an already significant problem.

The combat trains CP is also the alternate main CP. Given the problems discussed above, it is no wonder that the combat trains CP is ill-prepared for this function. One successful unit transferred a soldier with TOC experience to the combat trains to help this problem and to cross train other people. Nonetheless, loss of the main command post is

---

[56] Bonesteel, p. 6.
[57] U.S. Army Center for Lessons Learned. Observation 4453, 19 January, 1989.
[58] U.S. Army Center for Lessons Learned. Observation 4362, 27 March, 1989.
[59] U.S. Army Center for Lessons Learned. Observation 3390, 11 April 1988.

catastrophic. The combat trains can assume the TOC role for only limited periods of time and with limited capabilities.[60]

Field Trains

"Current task force level CSS doctrine generally works well even under demanding circumstances and represents a significant improvement over previous procedures, ..."[61] With the advent of the forward support battalion managing activities in the BSA, battalion field trains are no longer left on their own.[62] This helps movement and security and considerably enhances coordination. Another benefit is coordinating support for attached elements. With all the brigade task force field trains generally collocated, supporting attached elements is easier.[63]

Consolidating all available resources into LOGPACs and pushing them forward at the right time and place is the focus of the field trains command post.[64] This is a major effort and the reason many commanders select their very best captain for this command. The size of the headquarters company is over one third of the battalion total strength. The position was originally designed for a major.[65] The most significant problem in the field trains CP is lack of a facility from which to operate. There are no command post vehicles organic to the field trains and the only radios available are in wheeled vehicles.

---

[60] Center For Army Lessons Learned Newsletter, 27 February 1987. p. 13.
[61] Leland, p. 16.
[62] Center For Army Lessons Learned Bulletin No 1-87, April 1987, p. 24.
[63] Leland, p. 16.
[64] Center For Army Lessons Learned Newsletter, 1 July 1987, p. 15.
[65] Lawson, p. 18.

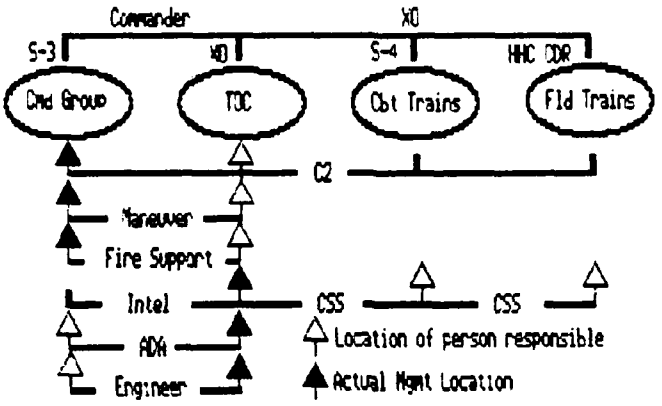

Figure 2: Battlefield Operating Systems

Solutions to the facility issue include moving a vehicle from the combat trains, modifying transport trucks, and using remote radios in a tent. All of these solutions take assets from their intended purpose and are less than satisfactory. The field trains commander needs a dedicated, mobile shelter with adequate communications to support this critical function.[66]

To summarize, units at the NTC are experiencing significant difficulties applying current doctrine to the overall synchronization effort. Unity of effort between the command group and the TOC, clarification of duties between the XO and the S-3, succession of command issues, and coordination of the CSS effort with the other battlefield operating systems are all typical deficiencies. Figure 2 outlines the relationship between the battlefield operating systems and the C^2 node from which they are managed. Is the problem lack of training, or a shortfall in doctrine, or both?

The Army recognizes the issue and is pursuing it further. NTC Rotation 88-4 focused on battle staff operations and synchronization at the battalion and brigade level. Answers

[66]Previous experience of the author over eight years of experience at the heavy task force level.

were unsatisfactory and the problem continues. Another focused rotation planned for 1990 will reexamine this critical issue.[67]

One Commander's Experience

An interview with LTC Thomas E. Brown, a previous task force commander, reinforced many of the NTC lessons learned.[68] His battalion was unique. Organized in garrison as an M1/M2 task force, the battalion consisted of three tank companies and one mechanized infantry company. The entire brigade was similarly task organized. This garrison task organization was part of an experiment at Fort Hood to try and overcome some of the synchronization problems presented to the task force commander. As a result, his insights are especially valuable.

LTC Brown generally fought the task force from a forward command group that included his S-3, FSO, and FAC. He often split the command group with the S-3 oriented on a secondary effort and the command group (-) oriented on the main effort. TOC organization was doctrinal as well. The XO worked primarily from the TOC during planning and execution phases. During recovery phases, he focused on CSS. LTC Brown also organized the combat and field trains doctrinally.

The responsibility for command and control was split between the task force commander forward and the XO in the TOC. The XO spoke primarily to brigade and to the battalion commander. LTC Brown most often directed his orders to the company XOs, they reported back through the TOC. Hence, the TOC became the main focus of information flow: company XO's reporting to the TOC, the battalion XO (TOC) reporting to brigade. This system freed both battalion and company commanders to monitor their higher nets and focus attention

---

[67] CPT Garcia, Center for Army Lessons Learned, conversation on 11 September 1989.

[68] LTC Thomas E. Brown, Jr. provided the information on how he organized his staff in an interview conducted on 25 October 1989 at the Command and General Staff College, Ft. Leavenworth, KS. LTC Brown commanded TF 1-8, a Combined Arms Maneuver Battalion (CAMB), in the 1st Cavalry Division, Ft Hood, TX, from March 1987 to April 1989. He is currently serving as a CAS3 instructor at Ft Leavenworth, KS.

downward on their own command nets. They could thereby focus their energy on directing subordinate elements at the critical time and place of the engagement. Overall synchronization was delegated to the XO in the TOC.

The phase of the battle generally dictated which role the XO assumed. During the planning phase, he functioned primarily as a chief of staff - synchronizing the staff effort toward the upcoming mission. During the engagement, his chief of staff function continued with a shift of focus toward the fight and synchronizing the BOSs. During the recovery phase, he was free to surge the CSS effort.

During his twenty five months of command, LTC Brown made several systematic refinements. For one thing, he specifically articulated the succession of command. If he was incapacitated during the fight, immediate command passed to the S-3, who was in a position to control the immediate fight. Later, when time allowed, the XO would come forward in a fighting vehicle and assume command. This procedure stood regardless of the S-3's rank.

LTC Brown delineated the XO and S-3 duties through internal SOP rather than structural alignment. The XO rated the staff (-). LTC Brown rated the S-3. This was the rating scheme regardless of the S-3's rank, often times a captain.

Another refinement was use of the FAC M113 assigned to the S-3 section. This vehicle was augmented with additional radios and used by either the S-3 Air during TOC displacement or by the XO to move forward and assume command.

For fire support, the FSO and FAC were most often forward with the commander. The FSO usually rode in LTC Brown's tank. The FAC coordinated CAS from his wheeled vehicle, vulnerable and considerably less mobile than the rest of the command group. The S-2 performed his duties from the TOC, although he would go forward with the battalion commander during reconnaissance. LTC Brown saw no significant advantage in

having him forward during the fight. Communications and facilities in the TOC outweighed any advantage having him forward.

LTC Brown gave special attention to the engineer effort. The average engineer platoon leader was incapable of commanding the engineer platoon and acting as a battalion engineer. Therefore, he committed a lieutenant from the S-3 section to move with the engineer platoon. This lieutenant tracked engineer progress, assisted in coordinating their efforts with the companies, and kept the XO in the TOC current on their status. Because this effort is so critical and difficult to synchronize, LTC Brown felt justified in dedicating a lieutenant to the task.

LTC Brown acknowledged the difficulty in synchronizing the CSS effort with the other BOSs. The XO's predominant tie to the TOC compounded the difficulty of the task. Selecting the most experienced company commander to command the headquarters company helped compensate. His selection for a second command typically followed demonstration of high performance as a rifle company commander. Choosing the HHC XO, 1SG, and support platoon leader required similar logic and care.

Mobile Subscriber Equipment (MSE) also had a positive impact on the CSS synchronization issue. With telephone and FAX communications between the TOC, the combat trains, and the field trains, they were able to better coordinate efforts. LTC Brown considered this a major improvement over previous reliance on FM and radio teletype (RATT).

LTC Brown was confident he could fight and win by implementing current staff doctrine. He did, however, see several ways of improving the synchronization process. Foremost is the requirement for a command and control vehicle. Commanding from a tank is difficult: there is no room for additional people and adding radios is difficult. However, he

felt he could not sacrifice the mobility, protection, and nonunique signature of his tank to use anything else. He favored a modified Bradley infantry fighting vehicle with enhanced communications. This would provide him the room, communications, and protection required without presenting a unique signature. The XO and the S-3 require the same type vehicle.

LTC Brown's experiences reinforce many of the published NTC lessons learned. He tailored his organizational procedures within the current doctrinal framework to best meet the needs of his task force. His battalion command experience, however, is limited to the rigors of the NTC and other peacetime training missions. While the NTC certainly provides an outstanding training environment to stress the task force, it does not totally replicate actual combat. Examining the Israeli Defense Force provides insight regarding one nations combat experience.

IV. ISRAELI DEFENSE FORCE.

Organization and Functions.

Note: The following information on the organization and functions within the Israeli Defense Force was obtained from two sources: MAJ Steve Read's notes taken while a student at the IDF Company Commanders Course[69] and from COL Izak Aberkohen, an army Colonel in the IDF[70]. While every attempt has been made to ensure accuracy, neither officer is an official spokesman for the IDF.

Figure 3 below shows the basic organization for an Israeli mechanized infantry battalion. The three mechanized infantry companies are organizationally similar to U.S. companies. The Fire Support (FS) Company includes 81mm mortars, a reconnaissance platoon, and a Dragon anti-tank

[69]Major Steve Reed, from notes and handouts taken while attending the Israeli Company Commanders Course, CL 91, 15 January 1991.

[70]Col Izak Aberkohen provided the information regarding IDF staff doctrine in a series of interviews conducted between 1 September and 5 December 1989 at the Command and General

guided missile (ATGM) platoon. The Headquarters and Service Company includes the staff, logistics and service elements, maintenance, medical, etc. The logistics officer commands this company. It also includes a platoon of fighting vehicles for the commander and his staff.[71]

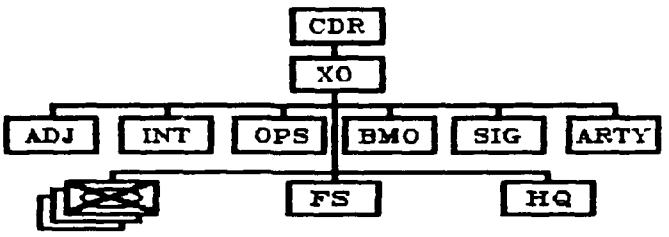

FIGURE 3: IDF MECHANIZED INFANTRY BATTALION[72]

The tank battalion includes a mechanized infantry company in place of the Fire Support Company. The battalion has a similar staff and Headquarters and Service company.[73]

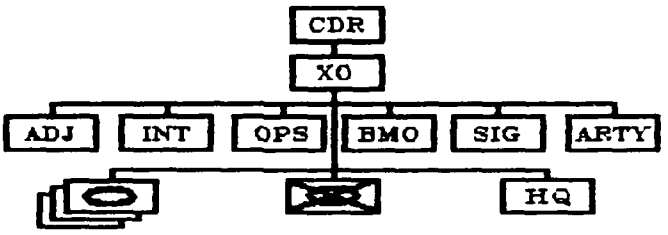

FIGURE 4: IDF ARMOR BATTALION[74]

When deployed, the IDF is organized into two primary echelons as shown in figure 5: the Combat Echelon and the Service Support Echelon.[75]

Staff College, Ft Leavenworth, KS. Col Aberkohen is a Colonel in the Israeli Defense Force and was attending CGSC Class 89-90 as an International Student.

[71] Aberkohen.

[72] Reed, organizational chart.

[73] Aberkohen.

[74] Reed.

[75] Aberkohen.

Combat Echelon

The Combat Echelon includes all combat forces and the maneuver command and control elements -- the forward command group and the main command post.[76]

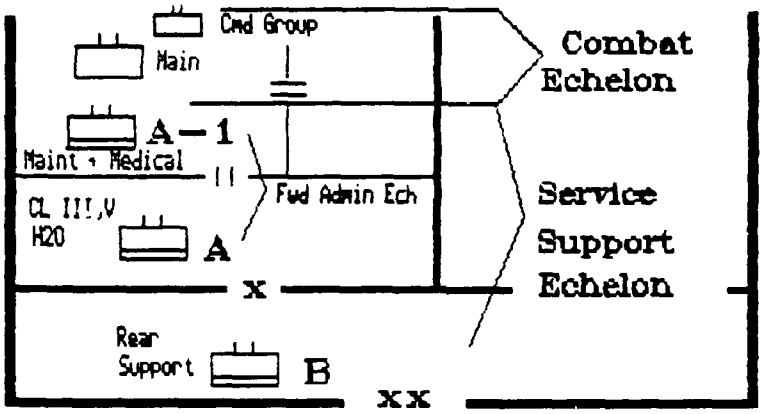

Figure 5: IDF Battalion Deployed Echelons

Forward Command Group

The commander typically commands from a forward vantage point in a fighting vehicle. His command group normally includes the operations officer, artillery liaison officer, frequently the battalion signals officer, and the deputy commander. The command group (-) fights from the battalion commander's vehicle and one other. The commander exercises most planning and synchronization from the forward command post. The deputy commander, also in a fighting vehicle, normally positions himself with the secondary effort.

The deputy commander's duties are similar to his U.S. counterparts in that he is the second in command of the battalion, the chief of staff, and the primary integrator for combat service support. However, his focus is different. His primary role is a fighting second-in-command. Positioned forward in a fighting vehicle, his primary focus is the close

---

[76] Ibid.

fight. More than a directed telescope, he often has leadership responsibilities, commanding one or more company teams as a counterattack force or a secondary effort in the task force sector. During lulls in the battle, he coordinates combat service support efforts through the logistics officer.

The operations officer is primarily an operations assistant to the task force commander. Even though he must attend the company pre-command course before assuming these duties, he is usually a senior first lieutenant or junior captain awaiting the opportunity to command. He normally rides with the commander in the commander's fighting vehicle

The artillery liaison officer is an artillery captain from the supporting artillery battalion. As part of the command group, he either rides with the commander or uses the HQ reserve fighting vehicle. In either case, he normally collocates with the commander to facilitate direct coordination. The signals officer is also frequently forward, operating the commander's radios. Both officers' training and other duties are similar to their U.S. counterparts.

Main Command Post

The main command post is primarily an information center, providing a single information and coordination facility. The deputy commander is responsible for the main command post but rarely works from it. It is a relatively small command post consisting of the remaining operations and intelligence sections, the intelligence officer, and the adjutant. The main CP monitors the close fight but little directing is done. The forward command group orchestrates primary command and control.

The intelligence officer is a military intelligence officer by branch. The Adjutant is a personnel specialist by branch. Both positions call for a captain though lieutenants often fill the positions.

Service Support Echelon

Service support functions within the IDF are concentrated at brigade level. The brigade logistics officer is the primary resource manager for the battalions. He either pushes resources forward in coordination with the battalion logistics officer or retains them in a brigade concentration for the battalions to rotate through in a gas station style arrangement. The battalion maintains an emergency resupply capability for fuel, ammunition, and water. Medical and maintenance functions focus on immediate turn around or evacuation to brigade. The battalion service support echelon subdivides into a forward administrative support echelon (**A** and **A-1**) and a rear support echelon (**B**).

The **A-1** echelon provides immediate medical and maintenance support to the companies. It locates "one tactical bound" (3-5 km) behind the front line. The headquarters and supply company commander (logistician) commands this echelon. The **A** echelon provides immediate fuel, water, and ammunition resupply. It locates in the brigade rear area and is commanded by the headquarters and supply deputy commander (assistant logistician). The **B** echelon (rear support) provides supply and services to the battalion before and after combat. It includes the company and battalion supply vehicles, the battalion mess, and the battalion office. It is locates in the division rear area under control of the division **B** echelon concentration.

The logistics officer and the maintenance officer are both specialists by branch. They are not combat arms captains like their U.S. counterparts. The logistics officer is also the administrative commander of the headquarters and service company in addition to his normal duties.

Analysis:

Yom Kippur

The saga of Battalion 77 on the Golan Heights in the 1973 Yom Kippur War is rich with examples of how the Israelis

fought at battalion level. The battalion commander (Avigdor Kahalani) fought from his tank. His operations officer, Lt Gidi, was his loader. The artillery liaison officer, Lt Snir, also set up in a tank, prepared to operate the radios, load shells, and fire the machine gun. The deputy battalion commander was also in a tank and operated forward with one of the tank companies.[77] The rest of the staff operated from the rear and came forward as required to coordinate with the battalion commander and the deputy. They also directed requirements to the staff through brief, mission type orders over the radio. They planned and directed directly from their tanks in forward positions.[78] There was little time available for anything more formal.

A brief look at this battalion in combat gives insight to how the organization provided flexibility and the ability to concentrate combat power rapidly at the desired time and place. Within the first few hours of combat, the brigade commander directed Battalion 77 to give up two companies. He sent one company to another battalion. The second became an independent brigade force under the command of the deputy battalion commander. All this occurred while the battalion was on the move and receiving changes in mission. LTC Kahalani personally led the battalion because he was receiving mission changes faster than he could disseminate instructions.[79]

Main command post involvement was significantly absent during the hectic mobilization and deployment phase at battalion and brigade level. Commanders communicated directly with brief, oral, mission type orders. For example, brigade commander to LTC Kahalani,

---

[77]Avigdor Kahalani, The Heights of Courage. (Westport Connecticut: Greenwood Press, 1984), pp 32-33.
[78]Ibid., pp. 25-33.
[79]Ibid., pp. 39-41.

Change of mission. Move to take position on the ridges north of Quneitra facing east. A large Syrian task force is approaching the town.[80]

LTC Kahalani used similar brevity and technique at battalion level. During a rapid rearm/refuel operation at an improvised brigade supply base, he received a new mission. He immediately started off in his own tank, depending on the rest to follow as the most expedient method to get the battalion moving. When asked over the radio where they were going, LTC Kahalani replied, "Follow me. I'll explain on the way."[81]

Use of the deputy battalion commander is also significant. Again, brigade commander to LTC Kahalani,

I want one tank company, under your deputy, to move to the ridge where you are heading ... Your deputy will switch to my frequency. From now on, he's an independent brigade force.[82]

When the deputy rejoined the battalion, he retained command of the company (-) and assumed responsibility for the battalion right flank. In fact, the deputy commanded four different company teams, under various headquarters, in three days of fighting. He commanded the independent brigade force on the first day of the war, 6 October.[83] He returned to the battalion on the 7th.[84] On 8 October, he was left with two companies to hold a ridge while the battalion (-) became the brigade reserve. He was then chopped to another battalion (Yos) in the Vale of Tears.[85] When Battalion 77 was recommitted to the same ridge, he rejoined his old battalion, without orders from brigade.[86] He acted on his own initiative and on his understanding of the brigade commander's intent. In the process, four tanks were shot out from underneath him.[87]

During lulls in the battle, the deputy coordinated resupply and evacuation and coordinated with the staff. The

[80]Ibid., p. 40.
[81]Ibid., p. 87.
[82]Ibid., p. 40.
[83]Ibid., p. 40.
[84]Ibid., p. 65.
[85]Ibid., p. 90
[86]Ibid., p. 97

battalion resupplied either by pulling tanks off line a few at a time or by passing through a brigade resupply point enroute to a new position.[88] In one instance, the brigade intelligence officer led a resupply convoy to the battalion.[89]

The orders process provides curious insight as well. On 11 October, the sixth day of fighting, LTC Kahalani returned from brigade after receiving his orders as part of a major counterattack against the Syrian Army to force an armistice. Battalion 77 was now consolidated pieces of Battalion 77 and Yos's battalion. LTC Kahalani knew less than half of his soldiers. To overcome this problem, he assembled the entire battalion, introduced himself and all the tank crews, and issued the operations order to the entire battalion. There was no staff estimate, apparent involvement of the staff, or war gaming. The battalion commander issued the order.[90]

The IDF and the Battlefield Operating Systems Framework

A review of the IDF doctrine within the battlefield operating systems framework provides a common ground for comparison. **Command and control** centers on the forward command group in the combat echelon. The command group (-) most often locates with the main effort, the deputy with the secondary effort. The main command post serves as an information center with primary focus on pre- and post-battle activities.[91]

Most striking is the shear chaos and violence of action. There was little time for the synchronization we talk about. All energies at the battalion level concentrated on maneuvering organic battalion fighting systems. While predictions vary on the future of the tank as the "king of the battlefield" and the relative advantages of offense versus defense, one conclusion is consistent. The IDF was able to win at the tactical level by massing direct fire systems at

[87] Ibid., p. 152
[88] Ibid., p. 97.
[89] Ibid., p. 163.
[90] Ibid., pp. 137-139.

the required time and place more effectively than the enemy.[92, 93] Expecting a main command post to keep up with such a pace and "paint the picture" for the battalion commander was not possible. The battalion commander "synchronized" the fight from his forward command post, assisted by those forward with him.

In terms of **maneuver**, infantry/armor combined arms are now the norm.[94] Lack of infantry was one of the lessons learned in the Yom Kippur War and has since received emphasis in the IDF.[95] Other maneuver systems, such as attack helicopters, do not normally operate under direct battalion control.[96]

Fire support has received renewed emphasis since 1973.[97] The artillery liaison officer is a key member of the forward command group and forward observers are at the company level. Battalions do not normally control close air support, although artillery observers do have radios capable of communicating directly with aircraft to identify friendly front lines.[98]

The intelligence officer orchestrates **intelligence** functions predominantly from the main command post. His primary function is pre-battle analysis in coordination with his brigade counterpart. Organic assets include only a few optical devices and the battalion scouts. The scouts report primarily to the forward command group, not the main command post. In the mechanized infantry battalion, the fire support company commander often commands the scouts and is augmented with additional assets from the battalion. The battalion does

---

[91] Aberkohen.

[92] Martin van Creveld, The Washington Papers, Vol III, "Military Lessons of the Yom Kippur War: Historical Perspectives." (Beverly Hills/London: Sage Publications, 1975). p. 39.

[93] Avraham (Bren) Adan, On the Banks of the Suez. (Presidio Press, 1980). p. 468.

[94] Aberkohen.

[95] van Creveld, p. 32.

[96] Aberkohen.

[97] van Creveld, p. 25.

[98] Aberkohen.

not usually receive additional intelligence assets from brigade.[99]

IDF ground forces were especially vulnerable to enemy air in the Yom Kippur war.[100] The battalion has no organic, dedicated **air defense artillery** nor does it receive assets from the brigade.[101] Since the battalion controls neither air nor air defense assets, air space management and synchronization efforts for these assets are not issues of concern at the battalion level.

An engineer platoon sometimes provides **mobility, countermobility, and survivability** to the battalion for specific missions. Most often, however, brigade keeps the engineers consolidated and controls them from brigade level. The battalion does have a demolitions squad organic to the fire support company (mech) and the HQ (armor). This squad provides limited breach and demolition capabilities and is often employed with the scouts or a lead company.[102]

The parent brigade provides the preponderance of combat service support to the battalion. The brigade keeps high volume items such as fuel, ammunition, and water in brigade concentrations or even division level concentrations. When the battalion is stationary, the brigade pushes LOGPACs forward on a routine basis, based on standard usage rates. The battalion logistics officer coordinates adjustments. When moving, the battalion circulates through one of the supply concentrations enroute. Medical and maintenance efforts focus on quick turn around close to the front or evacuation to the brigade.[103]

---

[99] Ibid.
[100] van Creveld, p. 30.
[101] Aberkohen.
[102] Ibid.
[103] Ibid.

V. COMPARE AND CONTRAST. U.S. ARMY VS IDF

Comparing and contrasting these two systems must be done with caution. The two armies are obviously different: different cultures, different force structures, and different missions. Nonetheless, their experience in high intensity modern combat at the tactical level is relevant. Caution is required because of the large measure of bias in available source materials. NTC observations and lessons learned are especially critical. Identifying patterns of weakness is their intended purpose. Yom Kippur tactical accounts tend more toward the laudatory efforts of a few heroic men overcoming nearly impossible odds. Critical analysis by official IDF sources remains cloaked by Israeli security concerns.[104] But the purpose here is not to measure one army against the other. Rather, this study attempts to gain insights to improve our own synchronization process, specifically focusing on the C^2 organizational structure.. The criteria for comparison are **effectiveness, resilience,** and **redundancy.** Figure 6 on page 35 summarizes this comparison.

EFFECTIVENESS:

Effectiveness examines the degree to which the organizational doctrine contributes to the overall battlefield operating systems synchronization effort. Are there organizational differences that better complement the synchronization process? Are both forces faced with the same synchronization task?

In the IDF system, the forward command group sharply focuses command, control and maneuver. The commander and the operations officer collocate and can therefore concentrate their collective energies toward the direct fire fight. The deputy commander commands the secondary effort. Communication links between brigade, battalion and the maneuver elements are direct. The result is a well defined unity of effort, simple

---

[104] Adan, p. 467.

in design, capable of rapidly massing direct fire systems at the critical time and place.

Since the forward command group has fewer operating systems to manage, the task is simpler. Battalions do not normally control attack helicopters, close air support, or dedicated air defense systems. They attach engineers by exception only. Since the synchronization task is easier, effective management is a less difficult task.

The U.S. system is more complex. A U.S. battalion typically receives a full "slice" of intelligence, ADA, and engineer support. Attack helicopters and close air support often support the battalion as well. There are more systems to manage. Home station training is difficult with non-organic combat support assets. Junior leaders are often incapable of leading their units and effectively serving as special staff officers. Therefore, effective synchronization is more difficult.

With the U.S. command and control function split among the command group (-), the S-3, and the TOC, achieving unity of effort is also more difficult. Fragile radio nets become the synchronization conduit rather than more effective face to face interaction. The net result is too often a piecemeal commitment of many systems and failure to gain the full synergism desired.

Artillery fire support systems are similar between the two armies. The fire support officer is with the commander, fire support teams deploy to the companies. I assume increased effectiveness on the U.S. side primarily because of TACFIRE. Both systems face the same problem of where to carry the fire support officer and his required communications, although the IDF forward command group has an extra vehicle available for this purpose.

Having a forward air controller present with the task force also gives weight to the U.S. fire support

synchronization effort. While the IDF artillery officer does have radios to communicate with aircraft, he is not dedicated to that task. The U.S. could further exploit this advantage in two ways. The FAC needs a C^2 vehicle with comparable mobility and protection to the force he supports. Also, we tend to be overly dependent on the FAC. Fire observers and company officers need training and communications to coordinate air support.[105]

Battalion level intelligence organization is very similar in the U.S. Army and the IDF. Both intelligence officers operate from within the main command post. Their interface with higher, adjacent and organic units is similar. The U.S. task force also has more intelligence equipment available. IDF assets are limited to a few optical devices and jeep mounted scouts.. The U.S. task force typically receives ground support radars and the M2 equipped scout platoon has a mobility, protection, and target acquisition (thermal sights) advantage over their IDF counterparts. The difficulty lies in translating potential advantages into actual combat multipliers.

A particular advantage in the IDF mechanized infantry battalion is an experienced fire support company commander available to command an augmented reconnaissance force. NTC lessons learned recommend augmenting the scouts as well,[106] but there is no available commander to assume this task. Augmentation decisions must balance the scout platoon leaders span of control capabilities and security concerns.

Many of the difficulties experienced by units at the NTC can be traced to failures within the intelligence operating system. Coordinating the intelligence preparation of the battlefield process with commanders and the staff, giving adequate priority to reconnaissance in the offense, and maintaining security in the defense are all repeated problem

---

[105] National Training Center Lessons Learned: Commanders Memorandum, p. 7.
[106] Center For Army Lessons Learned Compendium, Vol I: Heavy Forces, p. 5.

areas.[107] Hence, potential advantages often fail to materialize for lack of synchronization.

ADA comparisons are not applicable since the IDF does not normally dedicate ADA assets at the battalion level. For the U.S system, it further complicates the synchronization effort. Not only must the S-3 manage the given assets, he also incurs the added task of deconflicting air space.

Engineer systems are also difficult to compare since the employment doctrine itself is different. When attached to the IDF battalion, they face the same synchronization challenge we do. Perhaps the U.S. battalion better prepares to assume this task by practicing doctrinal slice relationships.

Combat service support synchronization effectiveness favors the IDF system for several reasons. First, all players in the CSS arena are branch trained. The logistics officer, the adjutant, the maintenance officer, and their assistants are all technical branch officers. These are not temporary positions for combat arms officers as in the U.S. system. The IDF CSS officer also tends to stay in his position longer, knows his job better, and requires less supervision. They are therefore less dependent upon the XO teaching them their jobs and supervising their efforts. This is not to say the IDF overall CSS system is necessarily better, only that it is easier to synchronize.

Resilience:

Resilience criterion tests how dependent the organization is on individual positions within the staff. How well can the organization absorb battlefield losses?

The tailored IDF organization absorbs the inevitable loss of key leaders better and can still synchronize command and control effectively. Positioning of the commander and his deputy is a key factor. The commander travels with a wing

---

[107] Ibid., pp. 3-6.

man, a second fighting vehicle from the HQ platoon occupied by other staff officers in the command group. If the commander's vehicle is disabled, this technique provides another at his immediate disposal. If he is killed or wounded, his wing man immediately communicates the status to the deputy. The deputy, forward in his own fighting vehicle, positions to immediately assume command.

One thing the IDF organization lacks is a third field grade officer in the battalion. Even though the IDF deputy is better positioned to assume command, he has no one of comparable experience to back him up like the S-3 in a U.S. battalion.

Within the maneuver operating system, the U.S. is more resilient. All the primary staff officers except the S-2 are combat arms officers . This provides a ready pool of company commanders to replace combat losses. There are no significant resilience issues regarding the fire support, intelligence, ADA, or engineer operating systems.

From the CSS perspective, the IDF system is more resilient. U.S. combat arms officers gain their CSS expertise largely through experience working in the position. Experience is harder to replace than technical training produced by the training base. Hence, U.S. CSS officers are not only less technically qualified (effectiveness) than their IDF counterparts, but also more difficult to replace.

REDUNDANCY:

The last criterion, redundancy, evaluates the organizations ability to sustain functions over extended periods of continuous operations. Can the organization still function when key positions are undermanned? How much leadership depth exists within each functional node to allow for the temporary absence of a key staff member? Redundancy differences apply to the command and control and combat service support operating systems.

The U.S. forward command group is more redundant than the IDF in that more U.S. field grade officers are present. While both systems have the battalion commander and one field grade officer forward, the U.S. S-3 is more experienced and the XO can move forward from the TOC to assume command if necessary. The biggest shortcoming in the U.S. system is the lack of a fighting vehicle for the XO.

In the main command post, the U.S. system has more redundancy in all operating systems except CSS. Yet because of the heavy synchronization effort we expect from the TOC and the separation of CSS to the combat trains, the U.S. system is highly dependent on the XO's presence. NTC lessons learned show few other officers in the TOC have either the experience or the authority to effectively accomplish this critical task. The IDF compensates for this lack of leadership by assuming a greater share of the synchronization effort forward in the command group.

BOSs[1]	Effectiveness	Resilience	Redundancy
C2	IDF	IDF	US
Maneuver	IDF	US	-
Fire Spt[2]	US	-	-
Intel	-	-	-
ADA[3]	N/A	N/A	N/A
Engr[4]	-	-	-
CSS	IDF	IDF	IDF

Notes: [1]Battlefield Operating Systems.
[2]IDF system does not include air.
[2]Dedicated ADA not normally employed @ IDF Bn level.
[3]IDF Engineer assets at Bn by exception only.

Figure 6: Evaluation Criteria Matrix

Redundancy favors the IDF regarding combat service support. While the number of officers and functions are similar in both armies, the IDF system is less dependent on

individuals. Much of the logistical tail present in a U.S. battalion exists at the brigade level in the IDF. Hence, depth at the battalion level is not as critical to the IDF battalion.

VI. CONCLUSION AND SUMMARY.

So what is the optimal battle staff organization to synchronize combat operations within the heavy task force? NTC lessons learned indicate major problems accomplishing this task with our current organization. For every recommended fix, there are trade-off sacrifices in other areas. The IDF organization seems to work for them, but there are subtle differences in their organization and doctrine, primarily from a CSS standpoint, that would not necessarily work for us. Either way, doctrine is a guide, not a dictum. The commander must tailor his battle staff based upon his own command philosophy, the capabilities and personalities of his staff, and the mission. Nonetheless, there are insights to be gained from this analysis.

First consideration is the main command post. What do we want the TOC to do? The answer to this question drives many of the other often debated staff organizational questions. Much has been written on this topic. Opinions vary from a panacea that provides all the information a commander could ever hope for to a simple message center similar to the IDF main command post concept. One author suggests:

> *The TOC responsibilities are many and complicated, but its primary job is to keep the commander informed on all aspects of friendly and enemy situations during battle. In addition to this all-encompassing requirement, BG Leland, a former NTC commander says the TOC must provide the commander with all of the information in a consolidated and analyzed form;...*[108]

---

[108]Ronald M. Bonesteel, The Battalion XO in Combat: Where Will He Be Most Effective?", Armor, (Jan-Feb 88), p. 31.

MAJ Vernon W. Humphrey, assigned to the U.S. Army Training Board at Fort Eustis, Virginia, argues a simpler approach.

> *Fundamentally, the TOC is a message center. It should serve as a focal point for the staff, a place through which information flows, and from which orders and information are disseminated. ... With the TOC serving as a message center, the staff members are free to go out and actively supervise their areas of responsibility, ...*[109]

The true capabilities of the TOC most likely fall between these two extremes. It certainly can and must be more than a simple message center. It is unlikely that it will ever be capable of tracking everything in a timely enough fashion to keep pace with the current fight. Yet with all the assets available in the TOC, under the supervision of an experienced field grade officer, the TOC is capable of making a major contribution to the commander's difficult synchronization task.

The TOC can track the battle, including the overall brigade situation, adjacent and supporting units, and organic maneuver units. It can analyze enemy and friendly data and provide critical updates to the command group. It can provide the facility and resources to plan future operations and it can be the focus for information collection and dissemination.[110]

Too often we expect the TOC to eliminate the inherent uncertainty in war and to control the uncontrollable. Commanders must accept uncertainty regarding both enemy and friendly situations. They must allow subordinates the freedom to act and not spend all their time reporting to the TOC. The IDF seems to have found a good mix of this perspective. We must avoid the tendency to rely too heavily upon the TOC.

One method of enhancing the TOC's synchronization function is bringing the S-1 and the S-4 into the TOC.

---

[109] Humphrey, p. 38.

[110] Center For Army Lessons Learned Newsletter, 27 February 1987. pp. 18-19.

Brigade and higher levels often use this technique to facilitate the flow of information between staff members. Only at battalion level does the combat trains CP exist. The combat trains itself must remain separate because of the size and physical signature, but the staff officers should work from the TOC.

This technique increases synchronization effectiveness and decreases dependence on the XO as the sole link between CSS and the other six operating systems. Staff officers can interact on a regular basis and come and go as required to perform their duties. Further, it reduces the combined electronic signature of the TOC and the combat trains CP. MSE is the primary link to brigade and it would eliminate the radio link between the two battalion CPs. It also reduces communications between the companies and the battalion since the staff can more readily exchange information and avoid dual reporting.

Tailoring the TOC to this configuration also provides the commander more flexibility with his field grade officers: the XO and the S-3. Doctrine need not dictate the location for these two officers for there are too many unit unique variables the commander must consider. A primary consideration is succession of command. The second in command must be in a physical location to assume command, be fully aware of the friendly and enemy situation, and have ready access to a command vehicle with <u>good</u> communications. If this officer is the XO, he must be a "combat XO, not a chief of staff or trains officer."[111]

Using the XO in the TOC as a combined second in command, chief of staff, and primary CSS integrator is not workable. At least one of these functions will suffer, if not all three. NTC solutions built around planning, execution, and recovery phases are artificial. On the Golan Heights, the 7th Armored Brigade fought an average of three engagements per day for

[111]Ibid., p. 37.

three straight days as wave after wave of Syrian tanks came at them.[112] This left little time for planning and recovery phases. All three must occur simultaneously.

I offer two solutions. If the XO is the second in command, he needs to be forward in a combat vehicle. This solution puts the S-3 in the TOC with an expanded role of integrating all operating systems, to include CSS, as a subordinate to the XO. With the S-3 in the TOC, he can not only concentrate synchronization efforts but also plan future operations.

Another equally viable solution keeps the S-3 forward and the XO in the TOC as a chief of staff. In this case, however, the commander appoints the S-3 as the second in command, either temporarily as LTC Brown did or on a permanent basis. This decision would depend largely on relative ranks of the two officers involved.

Next consider the forward command group. IDF experiences, NTC lessons learned, and current doctrine all support the forward command concept. The question becomes one of organization and mission. The forward command group must be fully capable of managing the current fight without dependence on the TOC. Modern combat is too fast and too violent to afford the time consuming and radio dependent luxury of a TOC as an intermediate synchronization node in the current fight. The immediate close fight must be fought by the forward command group.

MSE enhances the forward command group's capability to command and control from this forward position. Communications between the battalion commander, main command post, and brigade should significantly improve. However, talking on MSE does not provide the ability to monitor as with FM radios. This will severely degrade the TOC's ability to monitor critical commander to commander communications.

---

[112]Center For Army Lessons Learned Newsletter, 31 January 1988, p. 12.

Hence, the forward command post should become the primary command post for the close fight and the TOC should become the alternate.

This technique would require some internal reorganization and equipment. Most pieces are already there: the commander, FSO and FAC. Missing is an operations assistant and the S-2. Also missing are enough command fighting vehicles for adequate protection and mobility. Depending on the situation, the S-2 may continue operating best from the TOC. An operations assistant and another fighting vehicle, however, are a must. The S-3 can fill this requirement when he is collocated with the commander or it could be filled by an officer from the S-3 section. Either way, the commander needs a wing man and competent help forward.

Both techniques demand additional fighting vehicles in the task force headquarters. Current authorizations only include two. At a minimum, the HQ needs a third reserve fighting vehicle for the XO, the FSO or FAC, or as back up for the commander. Dedicated command and control vehicles with common radio configurations are best. This provides the redundancy and flexibility for effective command and control. An M2 infantry fighting vehicle provides the space, protection, and mobility needed and would avoid a unique signature. They are also less expensive than M1 tanks and present less of a target.

The field trains CP concept is workable and should remain intact. Even though it places a tremendous responsibility on a single captain, the benefits provide a far more flexible and robust logistical capability than exists in the IDF battalion. Most commanders realize the criticality of the HHC commander and his team and choose them accordingly. What the field trains CP lacks is a command and control facility. MSE should solve the communications problem but the CP needs a mobile shelter. The M577 made available by eliminating the combat

trains CP is a possible short term solution. A dedicated truck mounted shelter would be better in the long term.

VII IMPLICATIONS

The most striking implication revealed in this analysis is the number of systems a U.S. commander must cope with compared to his IDF counterpart. With all the resources available to a U.S. task force with its "slice" of combat and combat service support, few at the NTC achieve the synergism desired. Training and organizational doctrine can help to a degree, but perhaps we are trying to place too many systems at the task force level and piecemealing critical combat multipliers as a result.

A recent end of tour interview with NTC opposing force commander LTC Peter Manza provides an interesting perspective.[113] He does not think "synchronization" applies at the task force level. In his opinion, it's a simple matter of controlling direct fire systems at the time and place of his choosing. His philosophy is simple plans, violent execution.

> *... win with your direct fire plans first. Do your plan to win with nothing. ... it's just a gobble out there in the desert, and I see too much of that, we see too much synchronization.*[114]

LTC Manza has some valid points. Current MTOEs and doctrine tend toward centralizing key combat multipliers at levels where they can be more effectively managed and massed for greater effect. Companies are stripped of CS and CSS assets, freeing them to concentrate on the direct fire fight. Pure armor and mechanized infantry companies often replace more traditional company teams in task organization. Ground support radars and ADA missile teams are no longer organic to the maneuver battalion. Brigades and higher levels more frequently control and mass attack helicopters and close air

---

[113] LTC H.D. Heimgartner, Memorandum for Commander, National Training Center, dated 25 June 1988, pp. 15-17.

[114] Ibid., p 17.

support. Brigades often employ engineers as a company rather than parceling out platoons to every task force. This trend demands continuous scrutiny and should continue when it makes sense.

Too often the "more is better" mind set clouds the commanders vision during the task organization process, making him feel compelled to parcel out combat multipliers to subordinate commands. Yet more is not better unless the commander has the capacity to translate potential into combat power. This may not always be possible at task force level. Particular problems exist at the combat support platoon level. Engineer and ADA platoon leaders, for example, are typically incapable of leading a platoon and performing as a special staff officer to the maneuver commander. They lack adequate experience. Would they not oftentimes be more effective in company or battery mass along the most critical avenue under control of their parent headquarters?

These issues are beyond the scope of this paper, yet they warrant critical consideration. When battalion after battalion demonstrates ineffective synchronization efforts after months of peak training preparation, it indicates a systematic problem. Organizing the staff as I propose will help, but it is not the only answer. Achieving true synergism requires interaction both within the staff and between commands and staffs to mass combat power at the proper level and achieve the desired effect. Finding this proper mix is the challenge.

Every system must operate at peak efficiency to be effective. The task force commander must focus on organic systems. He must personally command the battalion without relying on overly sophisticated command posts. Organizing and positioning staff officers to facilitate interaction helps simplify this process. Only through simple design and direct command relationships can he mass combat power faster than the enemy and win.

BIBLIOGRAPHY

Books

Adan, Avraham (Bren). On the Banks of the Suez. Presidio Press, 1980.

Bellamy, Chris. The Future of Land Warfare. New York: St. Martins Press, 1987.

Clausewitz, Carl von. On War. Edited and translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1976.

Herzog, Chaim. The War of Atonement, October, 1973. Boston: Little, Brown and Company, 1975.

Kahalani, Avigdor. The Heights of Courage: A Tank Leader's War On the Golan. Westport, Connecticut: Greenwood Press, 1984.

The Insight Team of the *London Sunday Times*. The Yom Kippur War. Garden City, New York: Doubleday & Company, Inc., 1974.

van Creveld, Martin. Command in War. Cambridge, Mass: Harvard University Press, 1985.

_____. The Washington Papers Vol III, 24: Military Lessons of the Yom Kippur War: Historical Perspectives. The Center for Strategic Studies and International Studies, Georgetown University, Washington, DC. Beverly Hills/London: Sage Publications, 1975.

Articles and Periodicals

Bonesteel, Ronald M. "The Battalion XO in Combat: Where Will He Be Most Effective?" Armor, January - February, 1988.

Humphrey, Vernon W. "NTC: Command and Control." Infantry, September - October 1984.

_____. "Winning at the NTC: Deliberate Attack." Infantry, July - August 1984.

Mather, Walter E. "A Bilateral Staff." Infantry, January - February 1982.

McMahon, Timothy L. "The Key to Success: Developing a C^2 Philosophy." Military Review, November 1985

Mountcastle, John W. "Command and Control of Army Units in Combat." Military Review, November 1985.

Schmidt, Robert L. "A Doctrine for Command." Military Review, November 1985.

Tanksley, David M. "C^2: Finding the Middle Ground." Military Review, November 1985.

Teston, Harvey A. "Command and Confusion at the NTC." Military Review, November, 1985.

Thompson, Henry L. "High Performing Staff--Part I: What Is It?" Army Organization Effectiveness Journal, Vol 8, No 1, 1984.

_____. "High Performing Staff--Part II: Developing and Sustaining the HPS." Army Organization Effectiveness Journal, Vol 8, No 2, 1984.

Government Documents

Center For Army Lessons Learned Compendium, Vol I: Heavy Forces, Fall 88, Preface. U.S. Army Combined Arms Training Activity (CATA), Ft Leavenworth, KS 66027-7000.

Center for Army Lessons Learned. "ISP 13, Observations Printout, Subject: Command, Control, and Communications Observations." Ft Leavenworth, KS: 12 Oct 88, observation 3166, 1 Oct 87.

Center For Army Lessons Learned Observation 1759, 07 April 1986. U.S. Army Combined Arms Training Activity (CATA), Ft Leavenworth, KS 66027-7000.

_____. Observation 4453, 19 January, 1989.

_____. Observation 4362, 27 March, 1989.

_____. Observation 3390, 11 April 1988.

Field Manual 71-2, The Tank and Mechanized Infantry Battalion Task Force. Washington, DC: US Government Printing Office, 1988

Field Manual 100-5, Operations. Washington, DC: Headquatrers, Department of the Army, May, 1986.

Field Manual 101-5, Staff Organization and Operations. (Washington, DC: US Government Printing Office, September 1984.

Field Circular 71-6, Battalion and Brigade Command and Control. Washington, DC: US Government Printing Office, 1 March 1985.

National Training Center Lessons Learned: Commanders Memorandum. Headquarters, National Training Center and Fort Irwin, California, 13 December 1985.

_____. Commander's Comments The CS Team, 8 May 1987.

National Training Center Lessons Learned. 31 January 1986.

_____. 1 May 1986.

_____. 1 September 1986.

_____. 27 February 1987.

_____. 1 July 1987.

_____. 31 January 1988.

THESES, STUDIES, AND OTHER PAPERS

Abate, C.W. & Giddings, W.P., "What is a Sergeant Major." Study Project. U.S. Army War College, Carlisle Barracks, PA, 6 May 1985.

Agerman, William C. "After Action Report, National Training Center (NTC) Rotation 88-4." MEMORANDUM THRU: Director, CALL, FOR: Commander, CATA. On file at Center for Lessons Learned, Fort Leavenworth, Kansas, dated 16 February 1988.

Burton, Michael A. "Command and Control: Is the U.S. Army's Current Problem With Decentralized Command and Control a Function of Doctrine or Training?" Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, 6 December 1986.

Crain, William F. "Battle Staff Operations: Synchronization of Planning at the Battalion and Brigade Level." MMAS thesis, Command and General Staff College, Fort Leavenworth, Kansas, 1989.

Heimgartner, H.D. Memorandum for Commander, National Training Center, dated 28 June 1988.

Goodkeep, Thomas R. "The Task Force Tactical Operations Center: An Organization For Success." Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, First Term AY 88-89.

Gilbert, Daniel J. "Heavy Brigade C2: Is the Current System Too Complex?" Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, First Term AY 88-89.

Kalb, John F. "Measuring Command and Control -- Considerations for Force Design." Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, 1986.

Krysa, J.C. "Tactical Command and Control in the Combined Arms Battalion Task Force." Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, 1988.

Lawson, Albert P., MAJ, "The Battalion XO's Role During Continuous Combat Operations: Cybernetic Fix or Command Back-up?" Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, AY 88-89.

Parker, Michael L. MAJ, "Battalion Task Force Command and Control -- Are We Using the "Big Four" Most Effectively?" Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, AY 88-89.

Tuttle, Henery Stanton. "The Liaison Officer - The AirLand Battle Commander's Directed Telescope." Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, 2 December 1985.

Willbanks, James H. "AirLand Battle Command and Control: Reducing the Need to communicate Electronically in the Command and Control of Combat Operations at the Tactical Level." MMAS Thesis, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, 1984.

Wojdakowski, W. "Battalion Staff Prepared For War: The Key To Combined Arms Success on the Modern Tactical Battlefield. Monograph, School of Advanced Military Studies, Ft. Leavenworth, KS: US Army Command and General Staff College, AY 88-89.

INTERVIEWS

Aberkohen, Izak, COL (IDF). CGSC Class 89-90 International Officer from Israel. Col Aberkohen provided the information regarding IDF staff doctrine in an interview conducted on 1 September 1989 at the Command and General Staff College, Ft Leavenworth, KS. Col Aberkohen is a Colonel in the Israeli Defense Force and was attending CGSC Class 89-90 as an International Student.[1]

Brown, Thomas E., Jr. LTC Brown provided the information on how he organized his staff in an interview conducted on 25 October 1989 at the Command and General Staff College, Ft. Leavenworth, KS. LTC Brown commanded TF 1-8, a Combined Arms Maneuver Battalion (CAMB), in the 1st Cavalry Division, Ft Hood, TX. from March 1987 to April 1989. He is currently serving as a CAS3 instructor at Ft Leavenworth, KS.

Reed, Steve. Major Reed provided the information regarding IDF staff doctrine in an interview conducted on 10 September 1989 at the School of Advanced Military Studies, Ft Leavenworth, KS. from notes and handouts taken while attending the Israeli Company Commanders Course, CL 81, 18 January 1981.